Mental Health of Transgender Youth Following Gender Identity Milestones by Level of Family Support. *

Travis Campbell[†] Samuel Mann[‡] Yana van der Meulen Rodgers[§]
Nathaniel M. Tran[¶]

June 14, 2024

Abstract

Importance: Transgender youth are at an elevated risk for adverse mental health outcomes compared with their cisgender peers. Identifying opportunities for intervention is a priority.

Objective: Transgender youth are at an elevated risk for adverse mental health outcomes compared with their cisgender peers. Identifying opportunities for intervention is a priority.

Design, Settings, and Participants: This retrospective cohort study compares changes in mental health outcomes among transgender youth who initiate gender identity milestones compared with those who initiate the same milestones 1 year later, stratified by level of family support, using the 2015 US Transgender Survey. The analytic samples included 18,303 transgender adults aged 18 and older who had initiated at least 1 gender identity milestone between ages 4 and 18 years.

Exposure: Four gender identity milestones: feeling one's gender was different, thinking of oneself as transgender, telling another that one is transgender, and living full-time in one's gender identity, stratified by 3 levels of family support: supportive, neutral, and adverse.

*We thank Jack Turban, MD, MHS, The University of California, San Francisco, Duc Hien Nguyen, PhD, University of Massachusetts Amherst, Cameron Deal, BA, Vanderbilt University, Patrick Button, PhD, Tulane University, an anonymous reviewer, and participants at the Association for Public Policy Analysis and Management and the American Economic Association conferences for their comments.

[†]Corresponding Author. Email: campbelt1@sou.edu. Department of Economics, Southern Oregon University, Ashland, Oregon.

[‡]RAND Corporation, Arlington, Virginia.

[§]Department of Labor Studies and Employment Relations, Rutgers University, Piscataway, New Jersey.

[¶]Division of Health Policy and Administration, University of Illinois at Chicago, Chicago, Illinois.

Main Outcomes: Age at first suicide attempt and at running away.

Results: Study participants included 18,303 transgender adults (10,288 [56.2%] assigned female at birth; 14,777 [80.7%] White). Initiating a gender identity milestone was associated with a higher risk of suicide attempt and running away from home among transgender youth. This finding was driven by children who live in unsupportive families. For example, thinking of oneself as transgender was associated with a meaningful increase in the overall probability of attempting suicide among those in either adverse families (estimate = 1.75 percentage points; 95% CI, 0.47-3.03) or neutral families (estimate = 1.39 percentage points; 95% CI, 0.72-2.05). Among youth living with supportive families, there were no statistically significant associations between gender identity milestones and adverse mental health outcomes and 95% CIs generally ruled out any meaningful associations.

Conclusion: These results demonstrate that without a supportive family environment, gender identity development increases the risk of transgender youth attempting suicide or running away from home. Social services and community resources to establish supportive relationships between transgender children and their parents are essential.

Conflict of Interest: Dr. Tran reported grants from National Institute on Aging, personal fees from NORC at the University of Chicago, and personal fees from Evaluation, Management, and Training Associates. No other disclosures were reported.

Funding information: No funding was received for this work.

I. Introduction

A growing body of research indicates that transgender youth experience substantial mental health disparities such as higher rates of depression, anxiety, and suicidality.[1;2] Identifying drivers of these disparities as well as protective factors, especially at key life stages and during identity development, is critical to improve mental health outcomes for transgender youth.

Transgender mental health disparities are likely a byproduct of gender dysphoria and gender minority stress.[1;3] *Gender dysphoria* refers to the distress caused by gender incongruence, ie, distress that results from the mismatch between one's felt or self-identifying gender and their sex assigned at birth.[4] *Gender minority stress* refers to the unique stressors experienced by transgender people because of the mistreatment of transgender individuals in society. Gender minority stress arises through both external factors, such as experiences of violence and rejection, and internal factors, such as expectations of rejection and identity concealment. Medical procedures that reduce gender dysphoria and achieve gender congruence, as well as interventions that reduce stigma and associated gender minority stress, are associated with improvements in mental health among gender minority adults.[5–10] Antitransgender legislation is associated with worsening mental health outcomes among gender minority individuals,[11] which is of particular note given the recent rise in antitransgender legislation,[12] including bills that establish criminal charges for providing gender-affirming care to transgender youth (eg, Oklahoma SB 129[13] and Wyoming SF0111[14]). However, little is known about how gender identity development among gender minority youth is associated with their mental health trajectories.

For transgender youth, gender identity milestones are common and an integral part of identity development during formative years. Common gender identity milestones among gender minorities include first identifying as transgender, first telling others that one is transgender, and first living as one's gender identity. Establishing one's gender identity or expression may result in changes in internalized and externalized stress because of exclusion, rejection, and violence, in turn, contributing to gender minority stress and gender dysphoria.[15] However, not all transgender people experience dysphoria, making it even more important to look for sources of mental health disparities beyond gender dysphoria. Establishing gender milestones is one way transgender people achieve self-actualization. Research indicates that younger generations of transgender youth reach key gender identity milestones at younger ages,[16;17] but little is known about how these milestones associate with the mental health trajectories of transgender youth.

This study seeks to identify the association between gender identity milestones and mental health trajectories among gender minority youth and how this association varies across

levels of family support. Family support varies among gender minority populations and rejection is associated with depression and anxiety, running away, homelessness, substance abuse, and suicidality.[18–21] The lack of family acceptance and support directly contributes to gender minority stress and dysphoria, especially among adolescents.[22;23] Moreover, adverse families of transgender youth often encourage or coerce their children into undergoing harmful gender identity change efforts, while supportive families may assist their transgender youth in accessing gender-affirming care.[24;25] We explored the role of family support as a protective factor during common and important identity development milestones among transgender youth.

II. Methods

To assess the association between gender identity milestones and the mental health of transgender youth, this cohort study compared changes in suicide attempts and running away between transgender youth that initiated a gender identity milestone and those who initiated the same milestone 1 year later with similar mental health outcomes prior and similar levels of family support. This study was approved by the Rutgers University institutional review board. Our retrospective cohort study followed Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.[26]

II.A. US Transgender Survey

Our analysis used data from the 2015 US Transgender Survey (USTS), the largest national survey of transgender people available.[27] The USTS was an online survey without a randomized sampling strategy. Consequently, sampling weights are not applied in the analysis and the estimates may not reflect the broader transgender population.

II.B. Measures of Family Support

The analytic sample was categorized into 3 groups: supportive family, neutral family, and adverse family. Respondents in the supportive group self-reported having a supportive family when they grew up and do not report any rejection behaviors. Respondents in the adverse group self-reported having an unsupportive family when they grew up and reported at least 1 rejection behavior. The neutral category comprised all other respondents.

To contextualize family environments, eTable 1 in Supplement 1 shows the association between family support and family behaviors. Transgender adults were much less likely to say that their family was supportive if a member of their family stopped speaking to them,

were violent toward them, kicked them out of the house, did not allow their clothes to match their gender, or sent them to conversion therapy. Transgender adults were much more likely to perceive their family as supportive if they were told they are respected/supported, used their preferred name, used their correct pronouns, were given money for their transition, received helped to change their name/gender on identification documents, did research to learn how to support them, or stood up for them.

When drawing comparisons, we will also use the term *unsupportive family* referring to the average outcome of the neutral family and adverse family groups. One-quarter of all survey respondents said their family was not aware of them being transgender, so they were not asked the questions used for these categories. These respondents were omitted from the sample.

II.C. Exposure and Outcome Measures

We used 4 gender identity milestones as exposure measures: ever feeling one's gender was different, ever thinking of oneself as transgender, ever telling another that one is transgender, and ever living full-time as the gender of one's gender identity. On average, these events occur in chronological order, starting with the feeling that one's gender is different. Exact wording is available in Supplement 1.

Adverse mental health outcomes included first suicide attempt and running away from home. Running away from home is associated with an increase in the subsequent risk of illicit drug use, homelessness, risky sexual behaviors, dropping out of school, criminal activity, and depressive symptoms[28–32]; hence, we viewed running away as an important indicator of poor mental health.[33]

II.D. Retrospective Cohorts

The survey collected data on when respondents first initiated gender identity milestones. We used these data to create retrospective cohorts within each family support group, covering an event window of 5 years before and 1 year after the milestone, where the intervention group initiated the milestone during the last year of the event window and the comparison group initiated 1 year after the event window. Because we focused on transgender youth, our analytic samples included a cohort for each initiation age of 4 through 17 years (up to 13 total cohorts). Within each cohort, event time is aligned with the intervention group's initiation, so event time 0 always denotes the first year of the milestone for the intervention group. For instance, consider the age 15 years cohort of the supportive family group: the intervention group included respondents with supportive families who started the milestone

at age 15 years, while the comparison group consisted of respondents with supportive families who started at age 16 years. The event window included both groups from ages 10 (event time -5) to 15 (event time 0) years.

To ensure sufficient sample sizes, we permitted individuals within each cohort to be born in different calendar years, despite being the same age relative to the milestone's timing. To ensure that the comparison group is a reasonable counterfactual for the intervention group, we established mental health parity between the intervention and comparison groups over the 5 years preceding the milestone using synthetic unit weights within each cohort.[34] For additional information, see Supplement 1.

II.E. Statistical Analysis

To estimate the association between gender identity milestones and the mental health of transgender youth, we estimated an event study model using linear regression with dynamic intervention effects. The model averaged the effects across cohorts separately for each family support group. Our regression model allowed the trends in outcomes to deviate between intervention and comparison individuals for 5 years prior to the social transition milestone by interacting an intervention indicator with event time. We also included cohort-specific controls for other social transition steps in case they were concurrent, along with cohort-specific individual fixed effects and cohort-specific age-calendar year fixed effects, which accounted for respondents being born in different calendar years. The timeframe included 5 years before and 1 year after the milestone. All regressions applied synthetic unit weights. The analysis was conducted using Stata version 17.0 (StataCorp).

To estimate the overall association of the gender identity milestone, we calculated a weighted average of the regression coefficients of each family support group. The weights correspond to the proportion of respondents in each group. Next, we estimated the difference in the effect between children with supportive families and a weighted average of the estimate for adverse and neutral family support groups.

Respondents could be included in the intervention group of any gender identity milestone that they initiated before the age of 18 years and could also be included in the comparison group of the cohort who initiated 1 year earlier, implying that most respondents appear twice in the analytic sample. To account for the inflated stacked sample size, robust standard errors were clustered at the individual level rather than cohort-individual.

II.F. Results

Figure 1 reports descriptive trends for the share of individuals who had attempted suicide at least once and the share of youth who had run away from home, disaggregated by age and family support. Among transgender youth, those who grew up in adverse families were more likely to report that they had attempted suicide compared with those in neutral or supportive family environments. By age 18 years, the share of transgender individuals who had attempted suicide at least once was 1532 among those with adverse families (41.5%), 3210 for those with neutral families (32.8%), and 1541 for those with supportive families (22.5%). By age 18 years, 87 transgender youth from supportive families had run away from home at least once (1.3%), compared with 784 of those from neutral families (8.0%) and 486 from adverse families (13.1%).

Demographic characteristics are presented in eTable 2 in Supplement 1, while the absolute standardized mean differences between the intervention and comparison groups are depicted in Figure 2. These estimates are aggregated across the 4 gender identity milestones and 3 family support groups. A slight imbalance in respondents' ages is noted, falling just beyond the conventional threshold of 0.1. Notably, the fixed effects in our regression model account for this imbalance. No other disparities are detected.

Figures 3 and 4 report the estimated effects of the gender identity milestones on the risk of running away and the risk of attempting suicide for each family support subgroup, based on the stacked event study model. Both figures show that the intervention and comparison groups had remarkably similar trends in mental health outcomes over the 5 years preceding the intervention, which strengthens the validity of our comparison group as a reasonable counterfactual for our intervention group.

The study team first examined the association of gender identity milestones with running away from home. Estimates in Figure 3 and eTable 3 in Supplement 1 show that first feeling one's gender was different was not associated with a meaningful change in running away from home, regardless of family support group. The final gender identity milestone-first living full-time as one's gender identity-was associated with a meaningful increase in the overall probability of running away from home (estimate = 2.82 percentage points [pp]; 95% CI, 1.31-4.33). The stratified results indicate that this increase was driven by those in either adverse families (estimate = 5.33 pp; 95% CI, 1.49-9.17) or neutral families (estimate = 3.32 pp; 95% CI, 0.64-5.99), rather than supportive families (estimate = 0.96 pp; 95% CI, -0.26 to 2.18). The disparity between the supportive and unsupportive family groups was statistically significant (estimate = -2.86 pp; 95% CI, -5.40 to -0.33).

The 2 intermediary gender identity milestones—first thinking of oneself as transgender and first telling others that one is transgender—follow the same pattern of being driven

by those in adverse or neutral families; however, the magnitudes of the associations were smaller. Importantly, for youth in supportive family environments, the association between gender identity milestones and adverse mental health outcomes was null with precise 95% CIs, indicating that there is no substantial risk of running away associated with these 2 intermediate milestones.

The study team then examined the association between gender identity milestones and suicide attempt, which have a different pattern. As shown in Figure 4 and eTable 4 in Supplement 1, first feeling one's gender was different was associated with an increase in the overall probability of attempting suicide (estimate = 0.92 pp; 95% CI, 0.35-1.49) but was not statistically significant for supportive or adverse families. Thinking of oneself as transgender was associated with a nontrivial increase in the overall probability of attempting suicide (estimate = 1.04 pp; 95% CI, 0.58-1.50). However, this increase was driven by those in either adverse families (estimate = 1.75 pp; 95% CI, 0.47-3.03) or neutral families (estimate = 1.39 pp; 95% CI, 0.72-2.05) but not individuals with supportive families (estimate = 0.01 pp; 95% CI, -0.66 to 0.68). The disparity between the supportive family group and the unsupportive family groups was statistically significant (estimate = -1.48 pp; 95% CI, -2.38 to -0.58).

In stark contrast, first living as one's gender identity was not associated with a statistically significant change in suicide attempts overall (estimate = -2.11 pp; 95% CI, -4.48 to 0.27). There was no evidence of association in attempting suicide among respondents in supportive families (estimate = 1.92 pp; 95% CI, -1.84 to 5.68) or neutral families (estimate = -3.43 pp; 95% CI, -7.09 to 0.23), but this milestone was associated with a substantial reduction in suicide attempts for those in adverse family environments (estimate = -6.73 pp; 95% CI, -12.00 to -1.47).

III. Discussion

We found that transgender youth with unsupportive families, often marked by silence, violence, expulsion, clothing restrictions, or conversion therapy, have a higher probability of attempting suicide and running away at younger ages than transgender youth with supportive families, who often affirm their identity, use preferred names and correct pronouns, provide financial aid for transition, facilitate legal changes, actively research support methods, and advocate for them. By age 18 years, over 40% of transgender youth in adverse family environments have attempted suicide; for comparison, prior estimates indicate that around 5% of the general population have attempted suicide by age 18 years.[35]

Our results suggest that supportive families play a critical role in moderating the associ-

ation between gender identity milestones and adverse mental health. Among transgender youth in supportive family environments, gender identity milestones were not statistically significantly associated with suicide attempt or running away. Among gender minority youth with neutral families or adverse families, first thinking of oneself as transgender was associated with an increased probability of attempting suicide and running away from home. Similarly, first telling others that one is transgender and first living as one's gender identity were also associated with an increased probability of running away from home. However, among gender minority youth in adverse families, first living as one's gender identity was associated with a reduction in the probability of attempting suicide for the first time. These results provide new evidence on the important moderating role of family support in mitigating harmful mental health outcomes associated with gender identity milestones.

Family support is an essential protective factor for reducing transgender youth homelessness. Prior research demonstrates that more than 1 in 5 transgender youth are experiencing homelessness.[32] We find that, compared with transgender youth who have remained silent about their transgender identity, transgender youth who disclose their transgender identity in supportive families are not at increased risk for running away from home. These findings underscore the strong influence of family support on the well-being of transgender youth during identity development. Since 2014, federal agencies, such as the US Substance Abuse and Mental Health Services Administration, have issued guidance for health care professionals to help families support their transgender children.[36] Such efforts are likely to help transgender youth maintain family contact and avoid homelessness.

Some gender identity milestones are associated with an increased probability of suicide attempt, but only among transgender youth with unsupportive families. Our results suggest that interventions that increased family support will likely reduce the elevated risk of suicidality among transgender youth.[37;38] Not only do family members play an important role in supporting positive development among transgender youth, they can also protect transgender youth from stress associated with the social stigma of transgender identity.[39] The American Psychological Association has also affirmed the need for parents of transgender children to honor their expressed gender identity and to be involved in their health care decision-making, which includes facilitating access to gender-affirming care.[40] When families are unsupportive, efforts to provide schools and community organizations with knowledge of best practices to mentor and support transgender youth can help to mitigate some of the mental health risks during identity development.[41]

One striking finding is that living full-time as one's gender identity is associated with a reduced likelihood of attempting suicide among transgender youth with unsupportive families, even though the first 3 gender identity milestones are associated with increased

risks suicidality. This counterintuitive result may be related to the sharp increase in running away from home at the same milestone. A cautious potential interpretation of this result is that the mental health benefits of leaving an adverse family environment may outweigh the substantial costs of running away from home. Our findings underscore that transgender youth need safe stable housing throughout gender identity milestones to ensure they have adequate emotional, physical, and social support. Such supports may come from another nonparental family member or legal guardian.

III.A. Strengths and Limitations

We used the 2015 US Transgender Survey, which is the largest available sample of transgender individuals, to compare changes in the mental health of transgender youth initiating gender identity milestones with those who initiate 1 year later with similar family support. No comparable data, such as the US Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System or the National Institutes of Health's All of Us, include data about family support for one's gender identity. Despite using the largest available sample, we are unable to control for many time-variant characteristics or to explore heterogeneity by characteristics, such as geography, economic conditions, race, or ethnicity, due to limited power. Future data collection efforts that collect gender identity demographic data would be valuable.

One limitation is that our analysis may be subject to recall bias. However, we expect this effect to be small as gender identity milestones are often of great importance to an individual's identity development, and we interpret our findings to be lower bound estimates. In addition, the US Transgender Survey was collected via a community-driven sampling method. Only 2% of the total US Transgender Survey sample reported living in institutional settings, such as in shelters, transitional housing, or nursing homes, even though 22% of transgender youth reported homelessness in similar population datasets.[29] Our estimates therefore may be most representative of a stably housed, higher-socioeconomic status transgender population.

Another limitation is that we cannot examine life course suicidal ideation and we are only able to identify the age at first suicide attempt. The proportion of transgender individuals who have attempted suicide increases with age and some gender identity milestones, such as first telling someone else that one is transgender and first living full time as identified gender, are experienced later in adolescence. Therefore, the proportion of the sample that has not already attempted suicide becomes much smaller for gender identity milestones experienced later in life. Relatedly, if gender identity milestones increase the incidence and lethality of suicide attempts, then people who were most adversely affected by gender identity milestones and died by suicide are likely excluded from the sample. These 2 factors suggest that our

estimates are subject to attrition bias and reflect lower bound estimates. We suspect that family support (and the interaction of family support with gender dysphoria and minority stress) has an even greater influence on the mental health of transgender youth than indicated by our lower bound estimates.

IV. Conclusions

These results demonstrate that transgender youth have a high risk of running away and attempting suicide and these risks tend to increase as youth reach gender identity milestones. A supportive family environment is associated with much lower risk overall for running away and attempting suicide, and it mitigates the increased risk at gender identity milestone. Family-support–based interventions will likely be effective in reducing mental health disparities and high levels of homelessness and suicidality of transgender youth. Efforts of healthcare professionals, counselors, and other community leaders to help establish supportive relationships between transgender children and their parents are critical.

References

[1] Federica Pinna, Pasquale Paribello, Giulia Somaini, Alice Corona, Antonio Ventriglio, Carolina Corrias, Ilaria Frau, Roberto Murgia, Sabrina El Kacemi, Gian Maria Galeazzi, et al. Mental health in transgender individuals: a systematic review. *International review of psychiatry*, 34(3-4):292–359, 2022.

[2] Jack L Turban and Diane Ehrensaft. Research review: Gender identity in youth: treatment paradigms and controversies. *Journal of Child Psychology and Psychiatry*, 59(12):1228–1243, 2018.

[3] Jack L Turban, Dana King, Julia Kobe, Sari L Reisner, and Alex S Keuroghlian. Access to gender-affirming hormones during adolescence and mental health outcomes among transgender adults. *PLos one*, 17(1):e0261039, 2022.

[4] Fredrik Svenaeus. Diagnosing mental disorders and saving the normal: American psychiatric association, 2013. diagnostic and statistical manual of mental disorders, american psychiatric publishing: Washington, dc. 991 pp., isbn: 978-0890425558. price: $122.70. *Medicine, Health Care and Philosophy*, 17:241–244, 2014.

[5] Travis Campbell, Samuel Mann, Duc Hien Nguyen, and Yana van der Meulen Rodgers. Hormone therapy, suicidal risk, and transgender youth in the united states. In *AEA Papers and Proceedings*, volume 113, pages 551–555. American Economic Association 2014 Broadway, Suite 305, Nashville, TN 37203, 2023.

[6] Diana M Tordoff, Jonathon W Wanta, Arin Collin, Cesalie Stepney, David J Inwards-Breland, and Kym Ahrens. Mental health outcomes in transgender and nonbinary youths receiving gender-affirming care. *JAMA network open*, 5(2):e220978–e220978, 2022.

[7] Doron Amsalem, Justin Halloran, Brent Penque, Jillian Celentano, and Andrés Martin. Effect of a brief social contact video on transphobia and depression-related stigma among adolescents: a randomized clinical trial. *JAMA Network Open*, 5(2):e220376–e220376, 2022.

[8] Doron Amsalem and Andrés Martin. Reducing depression-related stigma and increasing treatment seeking among adolescents: randomized controlled trial of a brief video intervention. *Journal of Child Psychology and Psychiatry*, 63(2):210–217, 2022.

[9] Richard Bränström and John E Pachankis. Reduction in mental health treatment utilization among transgender individuals after gender-affirming surgeries: a total population study. *American journal of psychiatry*, 177(8):727–734, 2020.

[10] Cecilia Dhejne, Paul Lichtenstein, Marcus Boman, Anna LV Johansson, Niklas Långström, and Mikael Landén. Long-term follow-up of transsexual persons undergoing sex reassignment surgery: cohort study in sweden. *PloS one*, 6(2):e16885, 2011.

[11] Harry Barbee, Cameron Deal, and Gilbert Gonzales. Anti-transgender legislation—a public health concern for transgender youth. *JAMA pediatrics*, 176(2):125–126, 2022.

[12] Trans Legislation Tracker. Tracking the rise of anti-trans bills in the us. *Accessed June 7, 2024*, 15:2024, 2024.

[13] Oklahoma State Legislature. B 129 by bullard and west (kevin). *Accessed June 10, 2024*, 2024.

[14] State of Wyoming Legislature. Sf0111—child abuse-change of sex. *Accessed June 10, 2024*, 2024.

[15] Alyssa F Harlow, Dielle Lundberg, Julia R Raifman, Andy SL Tan, Carl G Streed, Emelia J Benjamin, and Andrew C Stokes. Association of coming out as lesbian, gay, and bisexual+ and risk of cigarette smoking in a nationally representative sample of youth and young adults. *JAMA pediatrics*, 175(1):56–63, 2021.

[16] Jae A Puckett, Samantha Tornello, Brian Mustanski, and Michael E Newcomb. Gender variations, generational effects, and mental health of transgender people in relation to timing and status of gender identity milestones. *Psychology of Sexual Orientation and Gender Diversity*, 9(2):165, 2022.

[17] Cristiano Scandurra, Agostino Carbone, Roberto Baiocco, Selene Mezzalira, Nelson Mauro Maldonato, and Vincenzo Bochicchio. Gender identity milestones, minority stress and mental health in three generational cohorts of italian binary and nonbinary transgender people. *International Journal of Environmental Research and Public Health*, 18(17):9057, 2021.

[18] Caitlin Ryan, Stephen T Russell, David Huebner, Rafael Diaz, and Jorge Sanchez. Family acceptance in adolescence and the health of lgbt young adults. *Journal of child and adolescent psychiatric nursing*, 23(4):205–213, 2010.

[19] Jaclyn M White Hughto, Sari L Reisner, and John E Pachankis. Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social science & medicine*, 147:222–231, 2015.

[20] Emily M Pariseau, Lydia Chevalier, Kristin A Long, Rebekah Clapham, Laura Edwards-Leeper, and Amy C Tishelman. The relationship between family acceptance-rejection and transgender youth psychosocial functioning. *Clinical Practice in Pediatric Psychology*, 7(3):267, 2019.

[21] Joseph G Kosciw, Caitlin M Clark, Nhan L Truong, and Adrian D Zongrone. *The 2019 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual, Transgender, and Queer Youth in Our Nation's Schools. A Report from GLSEN.* ERIC, 2020.

[22] Sabra L Katz-Wise, Stephanie L Budge, Ellen Fugate, Kaleigh Flanagan, Currie Touloumtzis, Brian Rood, Amaya Perez-Brumer, and Scott Leibowitz. Transactional pathways of transgender identity development in transgender and gender-nonconforming youth and caregiver perspectives from the trans youth family study. *International Journal of Transgenderism*, 18(3):243–263, 2017.

[23] Reidar Schei Jessen, Ira Ronit Hebold Haraldsen, and Erik Stänicke. Navigating in the dark: Meta-synthesis of subjective experiences of gender dysphoria amongst transgender and gender non-conforming youth. *Social Science & Medicine*, 281:114094, 2021.

[24] Travis Campbell, Samuel Mann, Yana van der Meulen Rodgers, and Nathaniel M Tran. Family matters: Exposure to gender-affirming or gender-denying practices following gender identity milestones. In *AEA Papers and Proceedings*, volume 114, pages 274–278. American Economic Association 2014 Broadway, Suite 305, Nashville, TN 37203, 2024.

[25] Tural Mammadli, Darren L Whitfield, and Jarrod Call. Gender identity conversion efforts as a source of minority stress among transgender and nonbinary persons living in the us: Correlation with wellbeing and proximal stressors. *Sexuality Research and Social Policy*, pages 1–14, 2024.

[26] Erik von Elm. Strobe initiative. the strengthening the reporting of observational studies

in epidemiology (strobe) statement: guidelines for reporting observational studies. *J Clin Epidemiol*, 61:344, 2008.

[27] Sandy E James. *2015 US transgender survey (USTS)*. 2019.

[28] Jeanne G Kaufman and Cathy Spatz Widom. Childhood victimization, running away, and delinquency. *Journal of research in crime and delinquency*, 36(4):347–370, 1999.

[29] Joan S Tucker, Maria Orlando Edelen, Phyllis L Ellickson, and David J Klein. Running away from home: A longitudinal study of adolescent risk factors and young adult outcomes. *Journal of youth and adolescence*, 40(5):507–518, 2011.

[30] Eric Rice, Anamika Barman-Adhikari, Harmony Rhoades, Hailey Winetrobe, Anthony Fulginiti, Roee Astor, Jorge Montoya, Aaron Plant, and Timothy Kordic. Homelessness experiences, sexual orientation, and sexual risk taking among high school students in los angeles. *Journal of Adolescent Health*, 52(6):773–778, 2013.

[31] Yumiko Aratani and Janice L Cooper. The effects of runaway-homeless episodes on high school dropout. *Youth & society*, 47(2):173–198, 2015.

[32] Cameron Deal, Riya D Doshi, and Gilbert Gonzales. Gender minority youth experiencing homelessness and corresponding health disparities. *Journal of Adolescent Health*, 72(5):763–769, 2023.

[33] Travis Campbell and Yana van der Meulen Rodgers. Conversion therapy, suicidality, and running away: An analysis of transgender youth in the us. *Journal of health economics*, 89:102750, 2023.

[34] Dmitry Arkhangelsky, Susan Athey, David A Hirshberg, Guido W Imbens, and Stefan Wager. Synthetic difference-in-differences. *American Economic Review*, 111(12):4088–4118, 2021.

[35] Matthew K Nock, Jennifer Greif Green, Irving Hwang, Katie A McLaughlin, Nancy A Sampson, Alan M Zaslavsky, and Ronald C Kessler. Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: results from the national comorbidity survey replication adolescent supplement. *JAMA psychiatry*, 70(3):300–310, 2013.

[36] Substance Abuse and Mental Health Services Administration. A practitioner's resource guide: helping families to support their lgbt children. *Accessed June 10, 2024*, 2024.

[37] Jean Malpas, Michael J Pellicane, and Elizabeth Glaeser. Family-based interventions with transgender and gender expansive youth: systematic review and best practice recommendations. *Transgender Health*, 7(1):7–29, 2022.

[38] Caroline M Parker, Jennifer S Hirsch, Morgan M Philbin, and Richard G Parker. The urgent need for research and interventions to address family-based stigma and discrimination against lesbian, gay, bisexual, transgender, and queer youth. *Journal of Adolescent Health*, 63(4):383–393, 2018.

[39] Camille Brown, Carolyn M Porta, Marla E Eisenberg, Barbara J McMorris, and Renee E Sieving. Family relationships and the health and well-being of transgender and gender-diverse youth: A critical review. *LGBT health*, 7(8):407–419, 2020.

[40] American Psychological Association. Apa adopts groundbreaking policy supporting transgender, gender diverse, nonbinary individuals. *Accessed June 7, 2024*, 2024.

[41] Sabra L Katz-Wise, Eli G Godwin, Neeki Parsa, Courtney A Brown, Annie Pullen Sansfaçon, Roberta Goldman, Melissa MacNish, Milagros C Rosal, and S Bryn Austin. Using family and ecological systems approaches to conceptualize family-and community-based experiences of transgender and/or nonbinary youth from the trans teen and family

narratives project. *Psychology of Sexual Orientation and Gender Diversity*, 9(1):21, 2022.

List of Figures

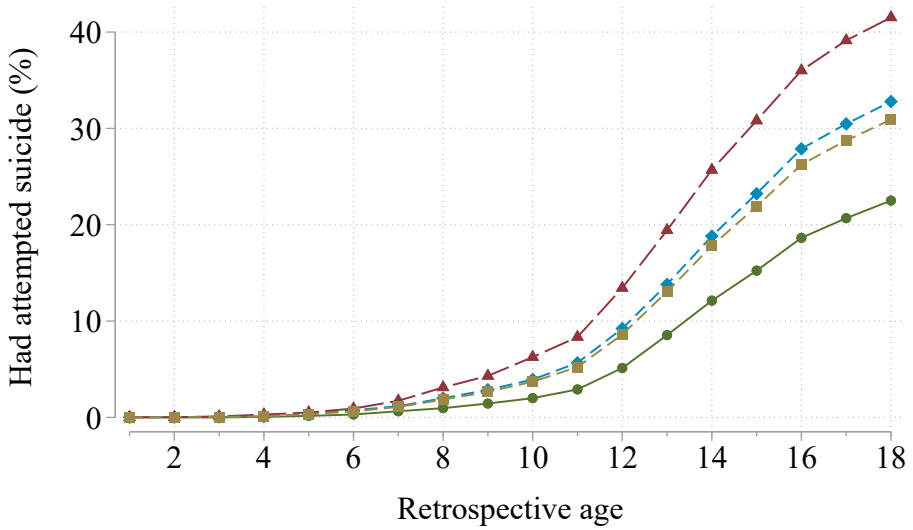
1 Share of Sample Who Reported Life Events Directly Related to Mental Health by Retrospective Age and Level of Family Support 15

2 Absolute Standardized Mean Differences Comparing Intervention and Comparison Groups 16

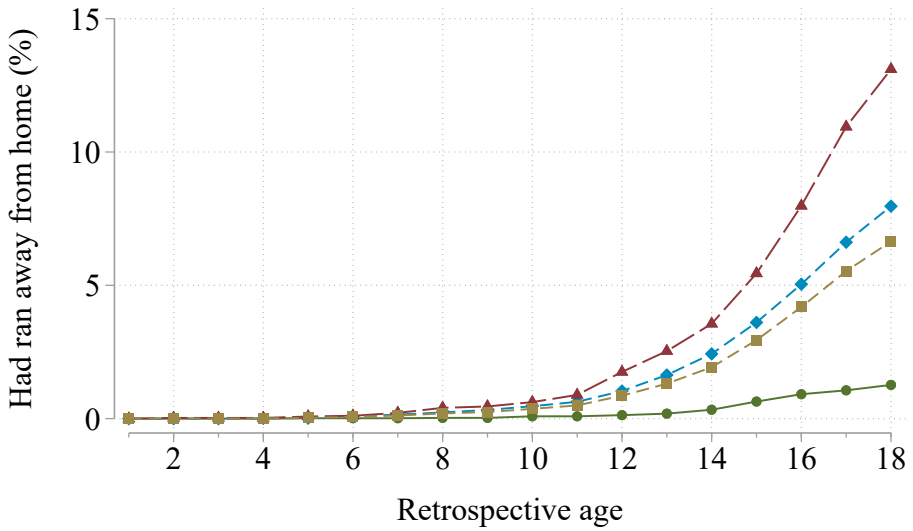
3 Event Study Estimates of the Association Between Gender Identity Milestones and the Risk of Running Away for Transgender Youth by Family Support Group 17

4 Event Study Estimates of the Association Between Gender Identity Milestones and the Risk of Attempting Suicide for Transgender Youth by Family Support Group 18

Figure 1: Share of Sample Who Reported Life Events Directly Related to Mental Health by Retrospective Age and Level of Family Support



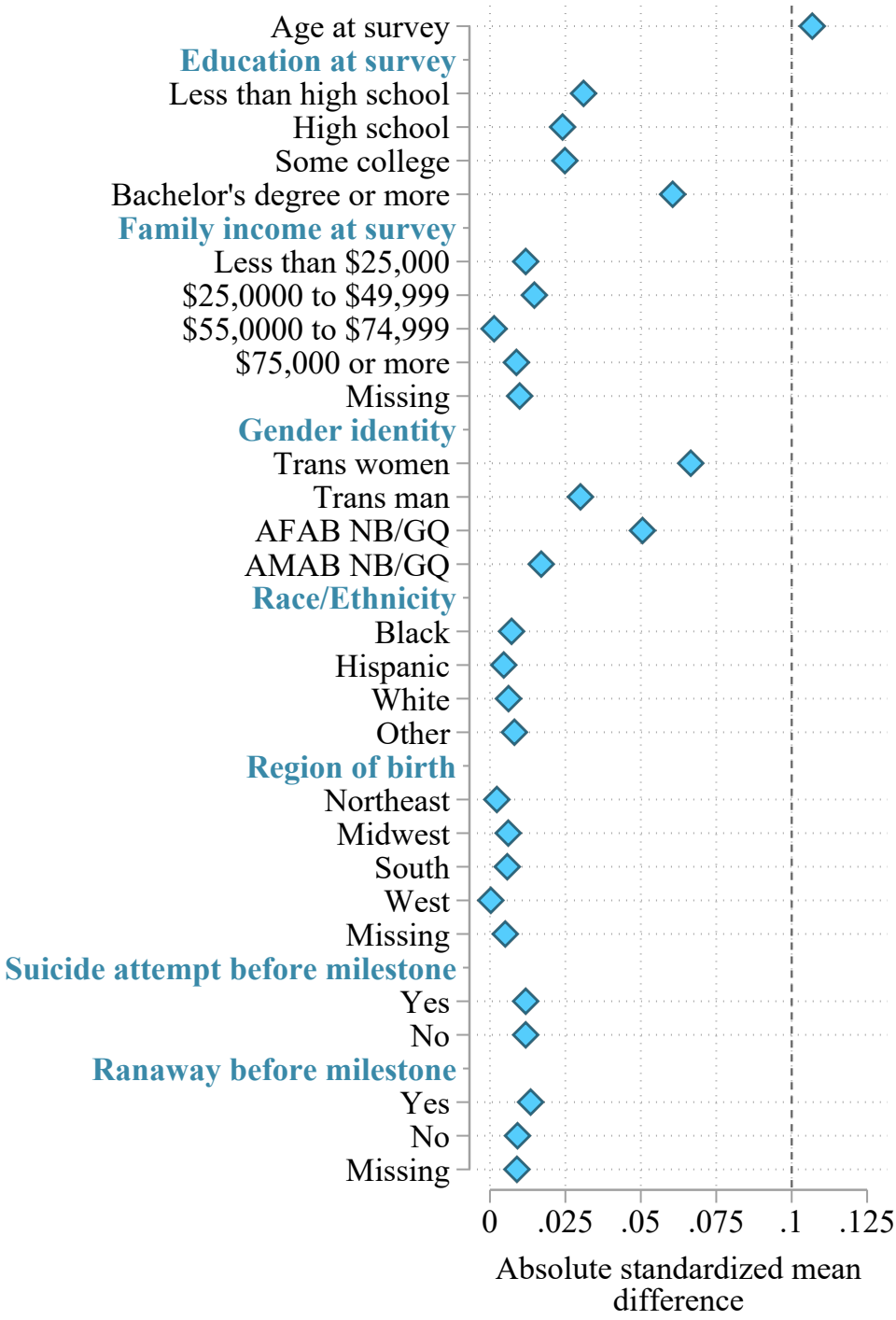
(a) Age first attempted suicide by level of family support



(b) Age first ran away from home by level of family support

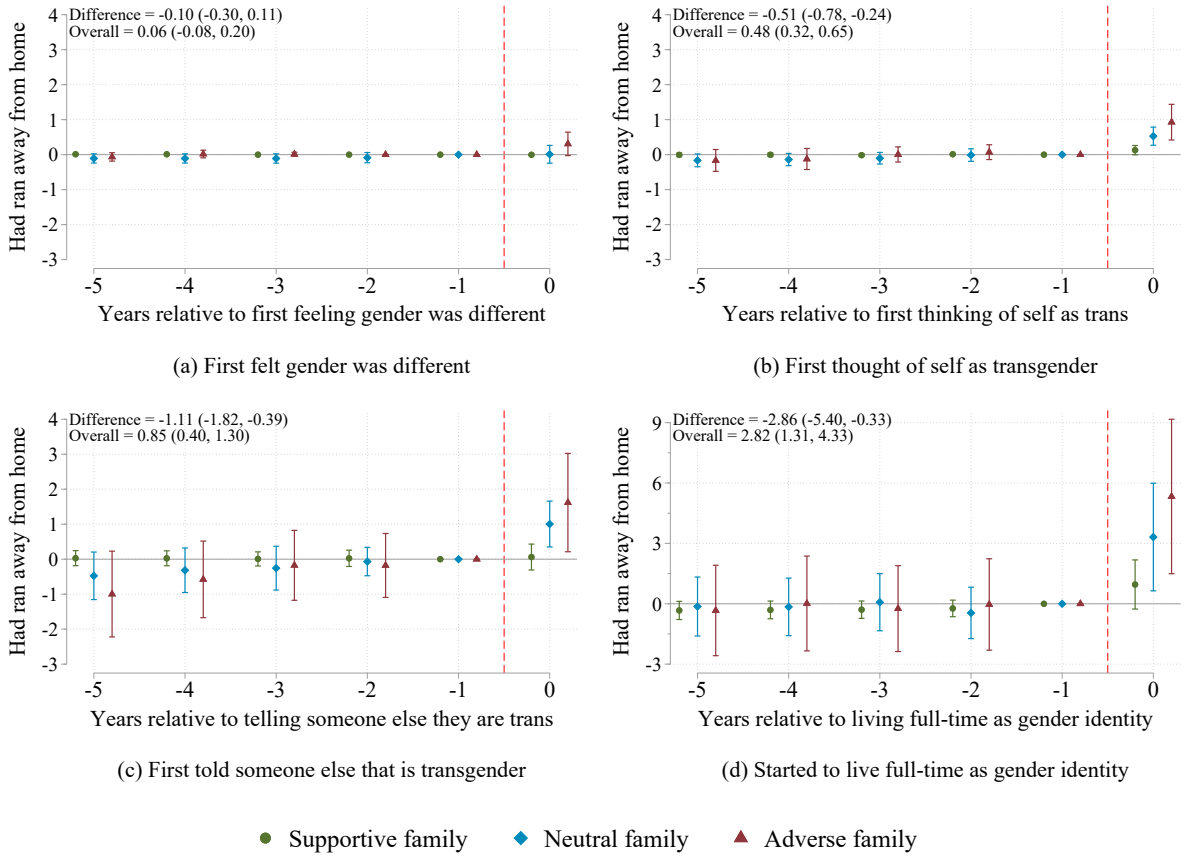
● Supportive family (solid line)
◆ Neutral family (dashed line)
▲ Adverse family (long dashed line)
■ Overall (dot-dashed line)

Figure 2: Absolute Standardized Mean Differences Comparing Intervention and Comparison Groups



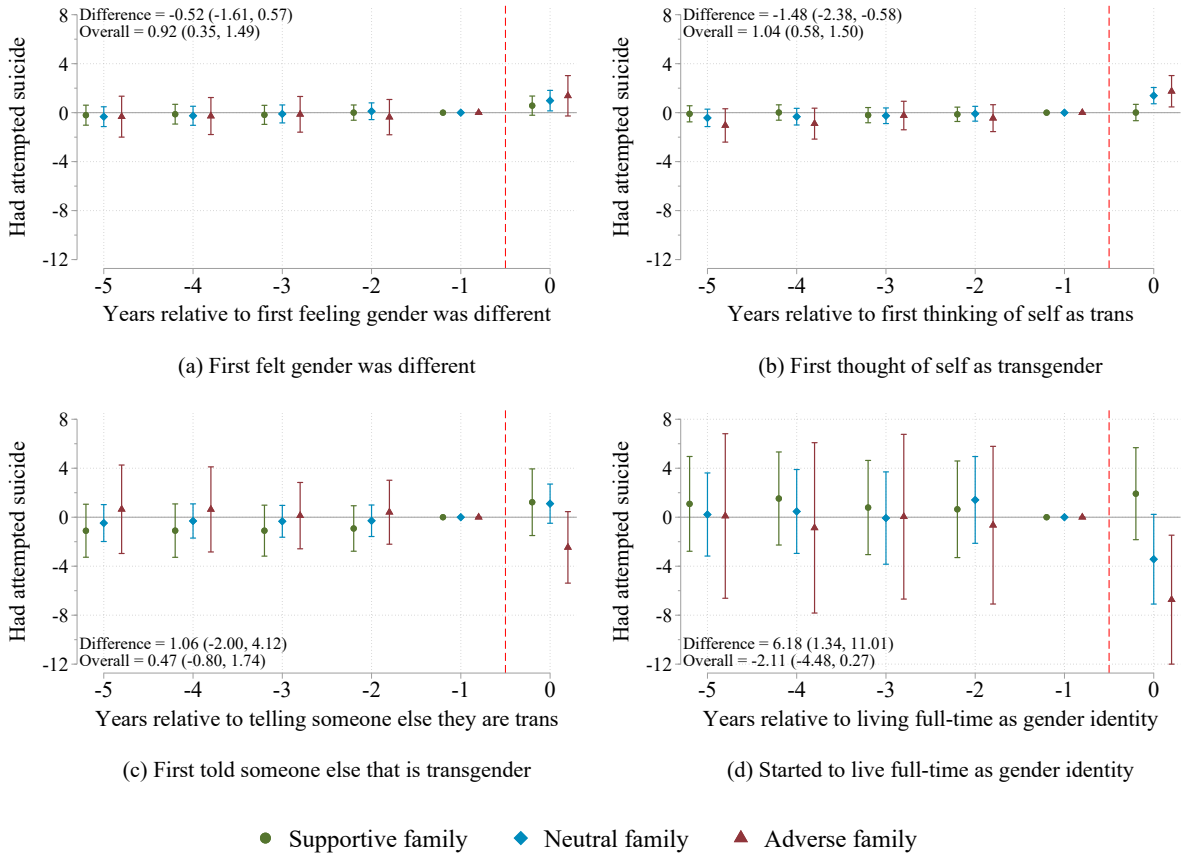
Notes: This figure depicts the absolute value of the difference in means between the intervention and comparison groups divided by the SD of the intervention group. The vertical line at 0.100 denotes the standard cutoff for detecting imbalance. For categorical variables, the test used category-specific indicators. The analysis was conducted on the sample constructed for the attempted suicide outcome and was pooled across the 4 gender identity milestones, applying synthetic unit weights. Respondents who self-identified as crossdresser are categorized genderqueer or nonbinary. Other race and ethnicity includes Alaska Native, American Indian, Asian, biracial/multiracial, Middle Eastern/North African, and Native Hawaiian/Pacific Islander.

Figure 3: Event Study Estimates of the Association Between Gender Identity Milestones and the Risk of Running Away for Transgender Youth by Family Support Group



Notes: The figures show the estimates of the stacked event study model for each family support subgroup. For each cohort, the comparison group includes only respondents who reported starting the gender identity milestone 1 year after the intervention group was initiated. The outcome in the regression is a dummy variable for running away (0 before the age of first running away and, if ever, 1 after). All regressions include cohort-individual fixed effects, cohort-age calendar-year fixed effects, and cohort-specific controls for each other gender identity milestone and are weighted by synthetic unit weights. The shaded area in each figure is the 95% CIs based on robust standard errors clustered by individual. The estimate difference provides the difference between the supportive family group and a weighted average of the neutral and adverse family groups, where the weights correspond to the sample shares. The estimate overall is a weighted average of the 3 family support groups, where the weights correspond to the sample shares. The 95% CIs for these 2 estimates are provided in parenthesis.

Figure 4: Event Study Estimates of the Association Between Gender Identity Milestones and the Risk of Attempting Suicide for Transgender Youth by Family Support Group



Notes: See legend for Figure 3. The outcome in the regression is a dummy variable for attempting suicide.